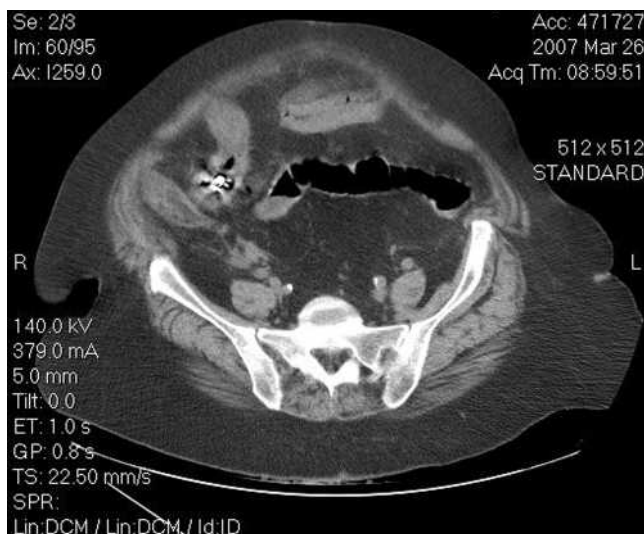


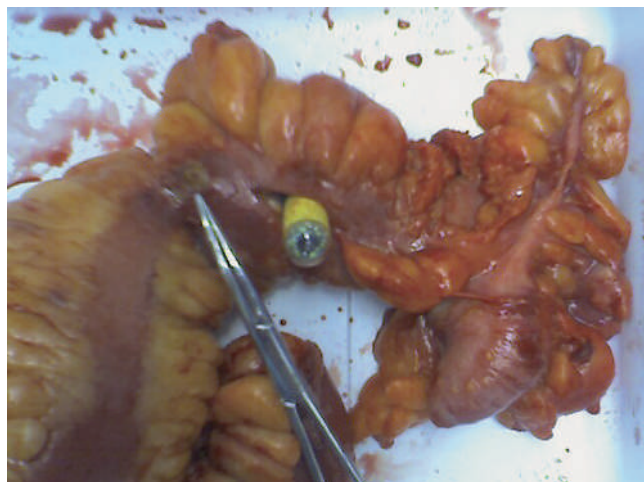
## Small bowel perforation caused by an impacted endocapsule



**Fig. 1** Metallic foreign body in the region of the terminal ileum.



**Fig. 2** Intraluminal metallic foreign body with inflammatory changes noted surrounding the terminal ileum.



**Fig. 3** The tip of the Kelly clamp points to the area of perforation. The endocapsule is taken out of the surgical incision in the terminal ileum after the resection.

Capsule endoscopy has become a common diagnostic study to evaluate small-bowel lesions. One of its major complications is small-bowel obstruction due to capsule impaction [1]. So far, there have been two documented cases of small-bowel perforation caused by the impacted capsule [2,3]. We report the case of a 75-year-old woman with Crohn's disease who presented with acute abdominal pain and vomiting. CT of the abdomen and pelvis showed small-bowel obstruction with a metallic foreign body in the distal ileum (• **Fig. 1** and **2**). Seventeen days earlier, the patient had undergone capsule endoscopy for evaluation of persistent diarrhea related to Crohn's disease, which revealed multiple strictures in the small-bowel.

Exploratory laparotomy revealed small-bowel dilation leading to the obstruction near the terminal ileum. Ischemic changes were noted throughout the terminal ileum consistent with Crohn's disease. In the same region, a 3-mm perforation and a retained endocapsule were found (• **Fig. 3**). This section of the small bowel was resected and a side-to-side anastomosis was created.

Capsule impaction occurs when an endocapsule remains in the digestive tract for more than 2 weeks [3]. Patients with Crohn's disease are at high risk of capsule impaction due to their tendency to form strictures. In our case, the location of the impaction/perforation and the length of retention time strongly suggest that the perforation was caused by the retained endocapsule. Studies on capsule impaction and/or small-bowel obstruction show incidence rate of 0.75–21% [3,4]. However, this rate may not be typical of capsule endoscopy in general, since the studies state that most participating patients undergo imaging tests prior to capsule endoscopy to rule out small-bowel strictures [4], whereas patients not enrolled in studies may not receive a complete set of evaluations prior to capsule endoscopy or may not always attend for follow-up, and both these factors could increase the rate of capsule impaction. In order to prevent such complications, all patients with suspected Crohn's disease must undergo imaging studies such as CT scan and upper gastrointestinal series/small bowel follow through to exclude strictures before they undergo capsule endoscopy. Providers must have a high index of suspicion of capsule impaction in patients who do not excrete the endocapsule within a reasonable amount of

time and surgical intervention should be planned.

Endoscopy\_UCTN\_Code\_CPL\_1AI\_2AB

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DOI 10.1055/s-2007-995694

*Endoscopy* 2008; 40: E122–E123

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